Claims

1. Device (5) for measuring capacitance with an electrode arrangement consisting of a plurality of electrodes (E1, E2, ..., En) which are located next to one another and/or in succession on a support (6), the actual measurement means (8) for measuring the capacitance between a first electrode (E2) as the measurement electrode and a second electrode (E1) as the counterelectrode, and a controllable switching means (7) for connection of the electrodes (E1, E2, ..., En) as the first and second electrodes (E2, E1) to the measurement means (8), which connection can be switched in a definable manner, and controlled by the switching means (7) each electrode (E1, E2, ..., En) of the electrode arrangement can be switched in alternation as the measurement electrode and at least one of the other electrodes (E1, E2, ..., En) can thereby be switched as the counterelectrode to a definable reference potential, **characterized in that** all electrodes (E1, E2, ...,En) which are not switched as the measurement electrode are switched as the counterelectrode, and that all electrodes (E1, E2, ..., En) which are switched as the counterelectrode are switched to the reference potential.

2. The device (5) as claimed in claim 1, wherein the definable reference potential is the ground potential of the measurement means (8).

3. The device (5) as claimed in one of claims 1 to 2, wherein all electrodes (E1, E2, ...,En) have an essentially identical contour and surface area.

counterelectrode, and a controllable switching means (7) by means of which the electrodes (E1, E2, ..., En) are connected as the first and second electrodes (E2, E1) to the measurement means (8) in a manner which can be switched in a definable way, controlled by the switching means (7) each electrode (E1, E2, ..., En) of the electrode arrangement being switched in alternation as the measurement electrode and at least one of the other electrodes (E1, E2, ..., En) thereby being switched as the counterelectrode to a definable reference potential, **wherein** all electrodes (E1, E2, ..., En) which are not switched as the measurement electrode are switched as the counterelectrode, and wherein all electrodes (E1, E2, ..., En) which are switched as the counterelectrode are switched to the reference potential.

10. The process as claimed in claim 9, wherein the switching means is controlled by a microprocessor according to a stored control program.

11. Means (1) for determining the level (2) of a liquid (3) in a container (4) with a device (5) as claimed in one of claims 1 to 8 and an evaluation means (9) which is downstream of the actual measurement means (8) and which determines the level (2) from the capacitance measured by the device (5) by comparison to stored reference values.

12. The means (1) as claimed in claim 11, wherein the liquid (3) and/or at least parts of a wall of the container (4) are also switched to the reference potential.

13. The means (1) as claimed in claim 11 or 12, wherein in the device (5) for measuring capacitance several electrodes (E1', E1"; ...; E5', E5") which are preferably not directly adjacent are interconnected hard-wired into one respective electrode group and wherein controlled by the switching device (7) each electrode group can be switched in alternation as

the measurement electrode and the other electrode groups can thereby be switched as the counterelectrode to the reference potential.

14. The means (1) as claimed in one of claims 11 to 13, wherein interconnection of the electrode groups takes place both with respect to the number of electrodes combined in one group and also with respect to the relative position of the electrodes combined in one group relative to the entire electrode arrangement such that the assignment of the measured capacitance value, which is to be undertaken by the means (1) for determining the level (2), to a resulting level (2) is unambiguous.

15. The means (1) as claimed in one of claims 11 to 14, wherein the electrodes are located on the inner side of a tube (16) which can be immersed into the liquid.

16. The means (1) as claimed in claim 15, wherein the tube (16) on its side facing the liquid has a coating at least partially, preferably over the entire surface area.